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# SOME NEGLECTED NAVAL LESSONS OF THE SPANISH WAR.

BY A FRIEND OF THE AMERICAN NAVY.

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THERE are few evils that have not some mitigating good accompanying them, and the so-called Sampson-Schley controversy, unfortunate as it is for the navy and the country in many respects, has not been without its advantage. It has aroused intense interest in the navy all over the country as hardly anything else has done. The recent court of inquiry, indeed, had a certain educational value, inasmuch as it gave occasion for exploiting a good many features of naval life which are ordinarily unknown to the public. Many friends of the navy, however, have regretted that the purview of the court of inquiry could not have been extended so that all the features of the war, both in the Atlantic and the Pacific, might have been thoroughly investigated. Some of the most important lessons to be learned from the war were not even touched upon in the inquiry, and they have received little attention from the authorities or from the public at large. And, should we be plunged into another naval war, with an efficient navy pitted against us, disaster might result from neglecting the warnings to be derived from the Spanish war, particularly from the Santiago campaign.

It is the more remarkable that the most important lesson of the late war should have been overlooked, because the vessel which emphasized it in such a marked way is continually spoken of in the press. We read a great deal about the magnificent performance of the "Oregon," but such explanations as are given us of the agencies to which that performance is to be attributed are couched in terms of the naval conventions of an era that is past. Yet if, among these agencies—apart from the individual qualities of the ship itself—there be any which can be made operative in

other ships, it is of the utmost importance that we know what they are, as a recognition of them will enable us to enhance the efficiency of the entire navy. Let us, therefore, consider briefly the record of the "Oregon," and see why she distinguished herself in so signal a manner.

Before war had been declared, but when the naval authorities felt that it was almost certain, it was believed that the "Oregon" could render little service in the Pacific, while she would materially increase the strength of the North Atlantic Fleet, and orders were accordingly sent for her to come around to the Atlantic coast. During her voyage war was declared, and it will be remembered that there was great anxiety lest she might be attacked by the entire Spanish fleet, and that great relief was felt when she safely arrived off the Florida coast. She had made the voyage of 14,500 miles in about fifty days, never losing an hour for repairs or overhauling anywhere, all such necessary work being done at the ports where she stopped to coal. Ordinarily, at the end of such an extended trip, it would have been considered entirely reasonable that the vessel should have a rest of at least two weeks for a complete overhaul, but the "Oregon" went immediately to the blockade off Santiago. It might have been expected that, when the day of battle arrived, a vessel which had just passed through such a severe ordeal would be at a disadvantage compared with the other ships; but, as is well known, the "Oregon's" performance at Santiago on July 3d, 1898, excelled that of any of her consorts in the fleet. Not only did she completely outdistance her sister ships, the "Indiana" and "Massachusetts," but her speed even rivalled that of the "Brooklyn," which was reckoned as being at least five knots faster. The commander-in-chief says in his official report:

"The fine speed of the 'Oregon' enabled her to take a front position in the chase, and the 'Cristobal Colon' did not give up until the 'Oregon' had thrown a thirteen-inch shell beyond her. This performance adds to the already brilliant record of this fine battle-ship, and speaks highly of the skill and care with which her admirable efficiency has been maintained during a service unprecedented in the history of vessels of her class."

One does not have to be an engineer to see that the phenomenal record of the "Oregon" from beginning to end was due to the skill and unremitting care of the chief engineer; and yet it is

highly probable that very few Americans know his name. It is but simple justice to this officer—Chief-Engineer Robert W. Milligan—that his name should stand high on the roll of the men who rendered distinguished service to their country during the Spanish war.

For the “Oregon’s” performance, her builders deserve great praise. No amount of skill would have enabled such a record to be made unless the machinery had been well constructed. But those who know the facts of Milligan’s remarkable zeal, skill, and far-sighted intelligence understand that the results are due to him in an unusual degree. There were practically no leaks to waste the precious fresh water, but losses cannot be entirely prevented even by the greatest care; and at an early stage of the long trip around South America he insisted that the boilers must receive first consideration, even at the expense, if necessary, of putting officers and crew on a short allowance of water. He found, soon after reaching the Atlantic, when he fell in with one of our colliers, that the coal he had last obtained on the west side was of a very much higher quality than that sent down from home. Accordingly, at the first opportunity, he had this best coal moved into “the fighting bunkers,” adjacent to the boilers; these he then locked, and he kept the key in his own possession. On the day of battle the doors were unlocked, and this superior quality of coal had much to do with the “Oregon’s” splendid exhibition of sustained high speed.

When the “Oregon” arrived at Key West, and again while on the blockade, but a few days before the battle, it was proposed, for reasons of economy, that some of the four boilers should be shut off, and that the ship should be kept under reduced power, as had been done on all the other vessels in the fleet except the “Texas.” To this Chief-Engineer Milligan strenuously objected, pointing out that if the Spaniards came out they would come out when they were not expected, and with their own ships ready for the highest speed, so that the blockading vessels should also be prepared for the highest possible speed. Fortunately, the chief engineer was permitted to have his way, and to maintain the ship in readiness for full speed at a moment’s notice—the duty for which, at such time and under such circumstances, the ships of our navy are presumably constructed. Suppose this course had not been followed. Under the most favorable con-

ditions, it takes more than an hour to raise steam in such large boilers as those of the "Oregon," and such rapid work involves decided risk to their integrity; but we can see what would have been the result if, instead of going at a speed of seventeen knots within twenty minutes after the Spanish fleet was sighted, an additional hour had been required to attain that speed. On the "Oregon," not only was steam maintained in all the boilers all the time, but fires were spread, so that, when the signal came for full speed, all that was necessary was to start the forced-draft blowers, close the fire-rooms, and throw on the coal.

The "Brooklyn," nominally of over twenty-one knots speed, was able to use only half power, because her forward engines were uncoupled, and time could not be spared to connect them; besides, half of her boilers were out of use, some of them not only having neither water in them nor fires under them ready to kindle, but actually having man-hole plates off. A similar state of affairs existed on all the other vessels in the squadron except the "Texas." While the trip of 14,500 miles would, of itself, have distinguished the "Oregon," her celebrity is really due to her magnificent speed during the battle, immediately following this long trip. Had not Chief-Engineer Milligan's advice been acted upon, the "Oregon" would probably have attracted no more attention than the "Indiana," whose captain found it necessary, in a communication to Admiral Sampson, dated August 6th, 1898, to call attention to the fact that his ship was present during the battle, in view of the slight notice which the "Indiana" had received in the reports of both Schley and Sampson. As for the part played by the "Iowa," it will probably be remembered that the "Oregon" went past the "Iowa" so rapidly, that the chaplain of the former, not being a naval expert, and being deceived by the similarity of the two ends of the vessel, actually thought that the "Iowa" was running away. Too much credit cannot be given to Chief-Engineer Milligan for the unrivalled achievement of the battleship which was made famous by his persistent and faithful performance of duty; yet, in the official report of the part taken by the "Oregon" in the battle of Santiago, his name is lost in the long general list of officers of the ship, which extends from the executive officer down to the lowest warrant officer, all of whom got exactly the same amount of praise as the man who made the "Oregon's" record for her.

We have gone at some length into this history of the "Oregon" to emphasize the point that the vital factor in the Santiago battle was engineering—a point which is forcibly illustrated, in a negative way, by the utter absence of engineering on the Spanish ships. These vessels were all of excellent design and construction, and none of them was over four years old, the "Colon," indeed, being less than a year old. All of them had made nineteen knots or more on their trial trips; and, had their engineering departments been efficient, they could have run away from our vessels. The great lesson, therefore, to be drawn from the battle of Santiago, is the vital importance of engineering to the efficiency of the modern fleet; yet, during the Schley Court of Inquiry this matter appeared only incidentally, and received so little attention from the court that, although it did transpire that most of the vessels were not capable of working at more than half power, the question was never asked: Who was responsible for this condition of affairs? A commander-in-chief is supposed to have such a thorough grasp of all the elements of victory under his control, that he shall see to it that nothing is overlooked which will maintain them all in the highest efficiency. If the vessels had half their guns disabled, knowledge of that fact would raise a tremendous outcry, but the permitting of the machinery to be reduced to such a condition that it could only give half power is an oversight of even graver character. Great attention was paid by the Schley court to the question of coal; yet the much more important matter of keeping the machinery which was to use the coal in readiness to use it to the fullest extent seems to have been utterly ignored. It is hardly an exaggeration to say that, had the blockaded fleet been composed of vessels of almost any other nationality than Spanish, most if not all of them would have escaped at Santiago. Our people generally have been so blinded by the completeness of the victories at Manila and Santiago, that they have failed to realize the actual facts of the situation, and they are in great danger of forgetting that the victory was due, less to our superior efficiency, than to the utter inefficiency of the Spaniards, both as engineers and as gunners.

One lesson which we ought to learn has been urged upon public attention for years, namely, the necessity of keeping our naval and military resources in a condition of efficient preparation for action. In this respect, both the army and the navy failed in im-

portant particulars, although, fortunately for us, the utter inefficiency of the Spaniards saved us from the punishment due to our neglect. For example, while careful students of events had realized that a war with Spain, the theatre of which would be in the West Indies, was highly probable, nothing had been done to put Key West, the only naval base we possess in that vicinity, in a state of efficiency. Even the modest recommendations of Admiral Melville, the Engineer-in-Chief, that the ramshackle shops there, which were nominally under his control, should be equipped with a few modern tools, had been overruled. After the destruction of the "Maine," Admiral Melville took the matter into his own hands, and he did, by vigorous action, put the shops into such condition that they were a great help in the maintenance of the blockading fleet. Not only should Key West have been made an adequate naval base, but the fitting out of a repair-ship, which had been planned as far back as the time of the Chilean imbroglio in 1892, should have been completed before the actual imminence of hostilities, instead of only being commenced at that time. This repair-ship, which was obtained by converting the merchant steamer "Chatham" into a floating machine-shop called the "Vulcan," proved of the greatest value to the fleet off Santiago, where she arrived just after the battle, when her facilities for repairs, as well as her splendid outfit of stores, were almost invaluable. She would have been of very much greater service, however, had she been able to accompany the fleet from the very beginning, as should have been the case.

As showing the lack of appreciation of the importance of the engineering side of the modern fleet, it will be a surprise to most people to know that when it was proposed after the destruction of Cervera's fleet to send the "Vulcan" out to Manila—where the large number of our vessels and the almost utter absence of facilities for repairs would have made her extremely valuable, and where she would have also saved the Government a large amount of money which was spent for repairs at Hong-Kong—Admiral Dewey, for some unaccountable reason, did not want her, stating that he had a navy-yard of his own at Cavite. But there is so little water at Cavite that only the smallest vessels could get up to the navy-yard there, a fact which has been emphasized recently by the recommendation of a naval board that, if an adequate navy-yard in the Philippines is to be laid out,

it should be at Olongapo on Subig Bay. The Department itself failed to grasp the importance of having such a vessel as the "Vulcan"; so that, when Admiral Dewey refused her, she was ordered to the League Island Navy Yard, and there her splendid equipment of machine tools was removed, thus making it necessary for us again to make a repair-ship from the beginning in case we have a fleet operating away from our own coasts.

The failure to realize the importance of engineering to the modern fleet has not been due to lack of foresight on the part of the naval engineers; for, besides the repair-ship "Vulcan," Melville planned and equipped two other vessels known as "distilling ships," whose office was to furnish fresh water for the boilers and, in case of necessity, for the crews, thereby obviating the necessity, which Milligan felt, of asking to have the crew put on an allowance.\* Owing to the irrational practice of putting off everything to the last minute, these distillers could not be started until after the war began, and there was great delay in getting suitable vessels; but one of them, the "Iris," was completed in time to have her services offered to the camp at Montauk Point. Even there, however, red tape deprived our men of the full advantage of this opportunity; for, on account of some quibble as to authority between the army and navy, it was deemed better to let the soldiers take their chances with water of uncertain quality rather than utilize the pure distilled water from the "Iris."

A very natural question, which will occur to any one who reads the foregoing with attention and with sincere interest in the efficiency of the navy, is: What efforts are being made in the navy to profit by the experiences of the Spanish-American war in general, and particularly as to the vital importance of engineering to the efficiency of the modern ship. To this, the answer at present is very discouraging. For over fifty years there had been a steady growth in the importance of machinery and engineering on war vessels, with a constant effort on the part of engineers to secure adequate recognition of the value of their services. In 1897, when President Roosevelt was Assistant Secretary of the Navy, he took hold of the question with the determination to settle the so-called "line and staff fight," and in-

\* To preserve marine boilers it is necessary to provide them with fresh water, which is obtained by condensing the steam made in the evaporators. Salt-water deposits scale and rapidly reduce the steaming power of the boilers. Hence, the vital importance of the matter referred to.



crease to the utmost the efficiency of all branches of the personnel. Under his chairmanship, a committee of officers, known as the "Personnel Board," met frequently during the month of November, 1897, and devised a bill, commonly called the "Personnel Bill," which was forwarded to the Secretary with an admirable report by Mr. Roosevelt as Chairman. The great feature of this bill was the plan to make all the officers of the navy engineers and gunners at the same time; as it was expressed by Chairman Foss of the House Naval Committee, "the naval officer of the future must be a fighting engineer." Mr. Roosevelt himself tersely described the condition which called for this central provision of the bill, when he said: "On the modern war vessel, every officer has to be an engineer whether he wants to or not." He elaborated this proposition by pointing out that the functions of the two classes of officers, those on deck and those in the engine-room, had been gradually getting nearer and nearer to each other, the former having more engineering, and the latter more executive duties, until there was but a short step, and a logical one, to having them all trained alike, so that any officer would be equally competent to take charge of the machinery or of a gun division. This scheme was not the outcome of the dreamings of a doctrinaire, but was the result of the suggestion of a well-known deck officer, Captain (now Admiral) R. D. Evans; and it received the unanimous approval of the Personnel Board, which consisted of seven line officers and four engineer officers.

More than this, when the bill was considered by the naval committees, and when there was ample opportunity to point out any defects in this scheme, practically not a voice was raised against it. In the pages of this REVIEW for December, 1898, there was a symposium on the subject, consisting of five articles—by Admiral Philip, representing the line officers; Admiral Melville, representing the engineers; Colonel Roosevelt, the man who had brought the scheme to fruition; Ex-Congressman Francis H. Wilson, who had really fathered it by presenting it to Colonel Roosevelt; and, finally, Congressman Foss, to whom more than to any one man the bill owes its passage. These articles discussed the measure very thoroughly, and so convincingly that, their influence supplementing that of the admirable report of Congressman Foss, the bill became a law on March 3d, 1899. The bill contained many features besides this amalgamation of the line

and engineer corps, with its accompanying interchange of duties. All of the other provisions of the bill have been carried out. Strangely enough, the absolutely vital provision of the bill, and the one which caused it to be passed, was not for a long time carried out at all, and only within the last few months has even a feeble effort been made to do so. Many friends of engineering, both in and out of the navy, have not hesitated to say that this failure to put into practice the interchange of duties was simply due to bad faith, and that there had never been any intention on the part of the line officers to make this experiment a success, their proposition for amalgamating the engineer corps with the line being simply intended to get the engineers out of the way, so that a scheme, which had been proposed at other times, for having the real engineering done by warrant officers, might be effected. The haste with which a corps of warrant machinists was formed lends color to this view. Admiral Melville has repeatedly called attention to the failure to enforce the law calling for an interchange of duties between the officers of the deck and of the engine-room, and it is now worthy of notice that, while he, as a member of the Personnel Board, voted for amalgamation, and while he has repeatedly, both in his annual reports and elsewhere, stated his unshaken belief in the correctness of the plan of the Personnel Bill, he has always guarded his statements by saying that the scheme is undoubtedly a good one, and will undoubtedly give efficiency *if it is administered with a desire to make it a success.*

London *Engineering* for November 15th, 1901, speaking editorially about the result of the change in the American navy, refers to the matter in a very hopeless way. The writer speaks of the present condition of affairs as: "The disaster that has overtaken their efforts towards improvement." The editor goes on to say:

"Engineering is not to be learned without practical object-lessons carried out by the student himself. No man can become a mechanical engineer without dirtying his hands, and also without devoting to the subject several years of hard study, accompanied by practical work. It is a matter of long and special training, both in theory and practice. No country that cannot command a body of men willing to undergo the disagreeable features incidental to engineering training, will be able to maintain its position as a first-class naval power under the stress of war, however many ships and guns it may possess. Neither Great Britain

nor the United States lacks such men, and it will be only the ruling powers of either country that will prevent their employment. . . . The chief danger is that the warrant machinists will be accepted as efficient stop-gaps, although we think there is too much engineering knowledge abroad in the United States for the foolishness of that course not to be seen. If, however, such a plan is accepted, the American navy will be thrown back at least a quarter of a century in its personnel. The old round will be trodden once more; the old fight fought again. In the mean time, the efficiency of the American navy will suffer; and if it should be put to the ultimate use for which all navies are supposed to be built, a very unpleasant awakening may result."

These are the remarks of a clear-headed student of naval affairs, who is not only competent to judge of them, but who has only friendly feelings for the United States. The time has long since passed when intelligent men in either country have believed it possible for war to occur between Great Britain and the United States; and, indeed, the feeling among such men is that in any war where both countries are involved they would be found fighting side by side. It is, therefore, a matter of keen regret to the thoughtful Englishman that anything should occur to reduce the efficiency of the American navy.

It may occur to some who read this article that the writer, in criticising the navy, is fouling his own nest; but he has believed that, as a patriotic citizen, the time had come to use very plain language, in the hope that the efficiency of the service, to which many years of his life have been devoted, may be maintained at the highest point. We have made a distinct change in our relation to the rest of the world, and have now started out as a world power, with possessions thousands of miles from our own coast, and with hopes of a greatly increasing commerce. If we are to maintain these foreign possessions and to protect this increased commerce, we must have a navy of the utmost efficiency; and as the day of Nelson's sailor-ships has passed, never to return, modern naval efficiency must be derived not only from the quarter-deck but also from below—the domain of the engineer. It is because of his affection for the navy that the writer has penned this criticism.

A FRIEND OF THE AMERICAN NAVY.